North Carolina Department of Environment and Natural Resources
Division of Waste Management

Pat McCrory
Governor

Dexter R. Matthews
Director

Dee Freeman
Secretary

January 8, 2014

Mr. Lawrence M. George, CPG
Marshall Miller & Associates, Inc.
5900 Triangle Drive, Raleigh, NC 27617

Re: Request for Work Plan & Cost Proposal for Task Orders **787DP-6 & 787DP-7**
For additional subsurface landfill gas study on VOCs, H_2S, Mercury, and Soil Asbestos
Rocky Knoll School Site,
Durham, Durham County, NC
ID# NONCD0000787

Dear Mr. George:

Please submit a task work plan (including schedule) and cost proposal to perform the Delineation Phase field work and reporting activities as outlined in this request at the Rocky Knoll School Site in Durham County, NC. These activities are to be conducted in accordance with State Contract No. N11001S.

Investigation Goals: : The goal for this task is to conduct additional sampling and analysis of subsurface landfill gases of VOCs and H_2S, and soil Asbestos at selected locations in the disposal area (see Attachment 1).

Subtask 787DP-6A: Provide a work plan that includes the activities discussed in the following:

- Provide a work plan that consists of a media contamination investigation. Prepare the work plan in accordance with the NC Superfund Section Quality Assurance Program Plan and Quality Assurance Standard Operating Procedures (QASOP).
- Certify that all employees, including subcontractor personnel, engaged in intrusive field activities at the site comply with OSHA – required health and safety training for hazardous waste sites.
- Develop a CAD-drawn site map that shows the proposed locations of gas probes.
- Provide a plan that details the handling of investigative derived waste (IDW). The plan must include specific details regarding containerizing and disposing the waste.
- Soil/solid media extracted from the borings exhibiting olfactory or visual impact can be placed back into the borehole as fill, provided that the groundwater table was not bisected. Impacted soil/solid media that can not be used as fill and spread on the ground surface must be drummed.
- Provide an activity work schedule that includes general daily activities for field work. This will include field prep, mobilization and demobilization.
- Take photographs before and after installation of each gas sampling location.
- Reference the most recent *Guidelines for Addressing Pre-Regulatory Landfills and Dumps* for details regarding procedures.

Subtask 787DP-6B: Sampling and Analysis of Subsurface Landfill Gas

- Install 7 subsurface gas probes at the selected locations as shown in **Attachment 1**. Seal each probe at least to a depth 5 feet below ground surface (bgs) to prevent air drawn from the surface. Complete gas probe with 1"diameter PVC well casing, a 0.010" slot screen will be placed into the bore hole, a sampling port will be installed in the opening and a cap will be placed over the port. Label each gas probe with a permanent marker.

- If the groundwater table is too high (7 feet bgs or less), install flux chambers. The flux chambers should be recessed into the ground surface and sealed with hydrated bentonite. Use air-tight fittings that allow connections to the chamber with the field instruments. Take following two (2) sets of landfill gas samples for lab analysis from GP-10A and GP-26.

Subtask 787DP-6C: Sampling and Analysis of Soils for Asbestos at Selected Locations

- Advance two (2) soil borings (probes **SB-10A ans SB~26**) at the approximately same location of GP- 10A and GP-26 in the landfill. These borings should be placed inside the property boundary as shown on the accompanying figure (**Attachment 1)**. Please consider a truck mounted drill rig to minimize surface impacts. Advance the borings to the depth of 10 feet below ground surface (bgs).

- The locations of the soil borings should be in the approximate locations indicated in Attachment 1. These borings should be placed as close to the residential structures as possible, however, within the property boundary.

- Five (5) Asbestos samples should be continuously taken from the boring cores at the following five (5) depth intervals of 0.0'~ 0.5', 0.5'~2.5', 2.5'-5.0', 5.0'-7.5', and 7.5'-10.0' bgs.

- Use EPA approved method(s), EPA/600/R-93116, to analyze the subsurface Asbestos samples.

Please Note:

- All sampling activities are in accordance with the approved *Standard Operating Procedures and Quality Assurance Manual* prepared by MMA dated June 10, 2010.

- All sampling locations are recorded with a GPS unit capable of accuracy using differential correction. A brief coordinate location description (e.g. B-1, etc.) should also be used. With regards to survey accuracy, the horizontal locations should be to the nearest 0.1 feet, and the vertical control for the ground surface and top-of-casing elevations should be to the nearest 0.01 feet.

- Soil borings are continuously logged during auger advancement from the ground surface to the targeted depth. Soils should be classified according to the Unified Soil Classification System.

- Submit samples to a North Carolina certified laboratory and analyze for the following parameters by the most current U.S. EPA Contract Laboratory Program Target Compound List: for volatile organic compounds by SW-846 method 8260. Please note that any alternate method should be by the U.S. EPA Method having the lowest detection limit and that at least achieves the detections equivalent to the 15A NCAC 2L standards or where these are not available, then federal maximum contaminant limits (MCLs).

- Gas probes will remain in place for future monitoring.

- Once I have reviewed the data, I will contact you about disposing those samples.

- Perform a completeness check of the laboratory data upon receipt and state if the data is usable. Forward the data sheets and completeness letter to me as soon as the check is complete and any laboratory issue has been resolved.

- One duplicate sample should be collected per media per day and analyzed when an auger is used, however,

not needed when Teflon liners are used for lab sample collection. Equipment blanks should only be collected from sampling equipment that has to be deconned before re-use (Teflon liners are considered to be clean). If equipment blanks are proposed, the work plan should note the specific sampling equipment that will be used that requires decontamination. One trip blank will be analyzed for VOCs only.

- Provide the laboratory a copy of Appendix B of the *Guidelines* to assure appropriate analyte lists.

Task Order 787DP-7: Under this task order assemble a report in the completed as part of Task 787DP-7, and name the report: "*Remedial Investigation Report: Sampling and Analysis of Subsurface Landfill Gas (VOCs, H_2S and mercury) and Subsurface Soil Asbestos*."

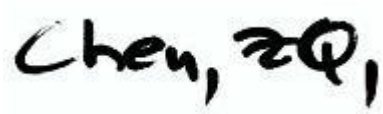
Please note that the report should contain the following items:

a). A section concerning any variations from the work plan or your SOPs.

b). Sample analytical results tables indicating BDL or ND for non-detects. Present results to match the lab report.

Provide work plan, cost estimate, and proposed schedule within 7 days of receipt of this request. Upon review and approval of the cost proposal, a task authorization to proceed will be issued.

If you have any questions, please email me at zi-qiang.chen@ncdenr.gov or call me at (919) 707-8347.



Zi-Qiang Chen, PhD, Environmental Engineer
Pre-Regulatory Landfill Unit,
Inactive Hazardous Sites Branch,
Superfund Section,
NCDWM

Attachment

Appendix 1. Investigation Map for Rocky Knoll School Site Task Order 787DP-6 (VOCs, H2S, and Soil Asbestos Studies)